PCT513 Wi-Fi Touchscreen Thermostat

Quick Start Guide

Safety Handling

> **WARNING:** Failure to follow these safety notices could result in fire, electric shock, other injuries, or damage to the Thermostat and other property. Read all the safety notices below before using the Thermostat.

- Avoid high humidity or extreme temperatures.
- Avoid long exposure to direct sunlight or strong ultraviolet light.
- Do not drop or expose the unit to intense vibration.
- Do not disassemble or try to repair the unit on your own.
- Do not expose the unit or its accessories to flammable liquids, gases or other explosives.

Overview of this guide

1 Welcome

The Wi-Fi Touchscreen thermostat makes it easier and smarter to control your household temperature. With the help of zone sensors, you can balance hot or cold spots throughout the home to achieve best comfort. You can schedule your thermostat working hours so it will work based on your plan.

This guide will provide you with an overview of the product and will help you understand how to use it.

2 In the box
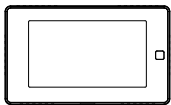
PCT513 Wi-Fi Touchscreen Thermostat

Remote Zone Sensor (optional)

Power module SWB511 (optional)

User guide

2*Screws

2*Drywall plugs

Wire Tags

3 **Installation Guide**

3-1 Removing your old thermostat

Step 1. Switch off your HVAC system

Before you start, please switch off your HVAC system to protect you and avoid blowing a fuse. Wait a few minutes, try to adjust the temperature in your old thermostat to double check if the system is off.

OFF

Breaker box   Switch
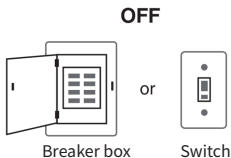
Step 2. Remove the old thermostat

Remove the old thermostat from the wall, keep the wallplate with wires.

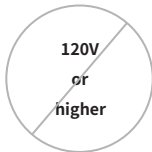Old thermostat

Do not remove
the wallplate
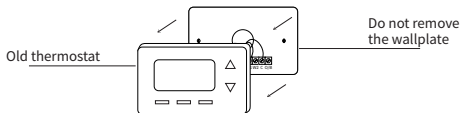
Step 3. Compatibility Check

If you find a thick wire with wire nuts on the backplate of the old thermostat, or if the voltage of your old system is 120v or higher, it will not be compatibled with PCT513. If none of the above, then please proceed to the next step.
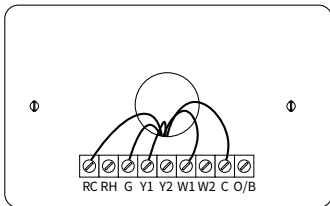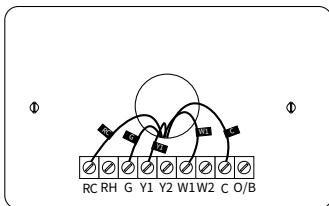

OR

Step 4. Take a photo

Take a picture of the wires connected to the terminal of your old thermostat. You may need to reference this photo later.
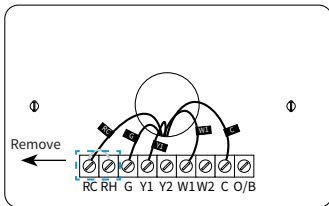
Step 5. Label the Wires with Tags

Label each wire on the wallplate with the tags **(label 1)** provided. Then carefully disconnect the wires.

Note: If there are any jumper wires between **Rh, Rc, or R** terminals, do not label them. PCT513 does not need jumpers. Remove them and save along with your old thermostat.
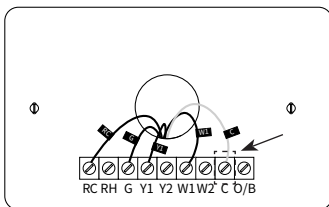
3-2 Connect wires

Do you have a C wire connected to your old thermostat?

YES → 3-2-1   NO → 3-2-2

Terminal designation:

| Terminals	What it means
RC	24VAC primary for cooling
RH	24VAC primary for heating
C	24VAC common
W1	1st stage Primary heating relay / Aux heat
W2	2nd stage Secondary heating relay / Aux heat
Y1	1st stage Primary compressor contactor
Y2	2nd stage Secondary compressor contactor
G	Fan relay
O/B	Changeover valve for heat pumps
S	Optional wiring module terminal to combine Y and G, while reserve an extra in-wall wire to power on the thermostat

3-2-1 Install the thermostat with a C-wire

Step 1. Remove the wallplate

Unscrew the wallplate from the wall, gently pull it out to ensure the wires will not fall back into the hole.

RC RH G Y1 Y2 W1 W2 C O/B
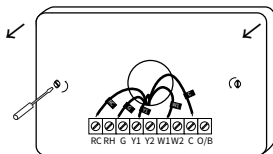
Step 2. Attach the base of PCT513 to the wall

Bundle and insert the wires through the hole of the base of PCT513, then attach the base to the wall with the screws.
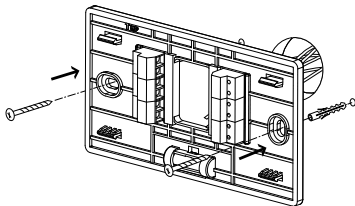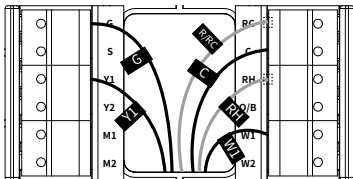
Step 3. Connect the wires

Connect wires to the corresponding terminal in the base. Take a picture of the wires when you finished. You may need to refer it for the wirings in the setup wizard later.

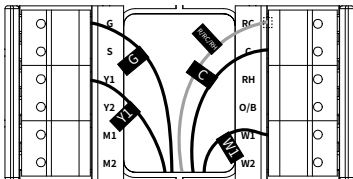Do you have more than one R wire (R, RC, and RH)?

YES:

R or RC wire into the RC terminal

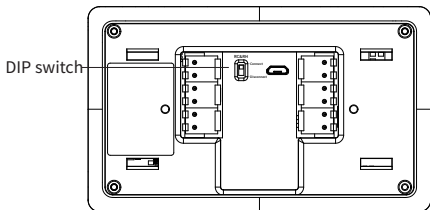RH wire into the RH terminal

NO:
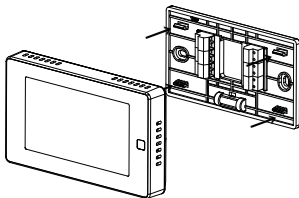
R, RC, or RH wire into the RC terminal

Step 4. DIP Switch

Adjust the DIP switch on the back of the thermostat to **'Disconnect'** if you have connected both the RC-wire and the RH-wire to the wallplate, otherwise, switch it to the **'Connect'** side.

DIP switch

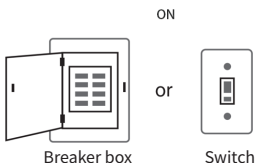## Step 5. Attach the PCT513 to the base

Gently press the PCT513 into the base until it clicks.
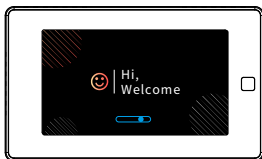
Step 6. Power on your system

Congratulation! The installation is finished. Please power on your HVAC system.

Breaker box   Switch

When the power is successfully energized, the thermostat's screen will light up and go into wizard. You can complete the following configuration according to section 4.

3-2-2 Install the thermostat without a C-wire (Optional)
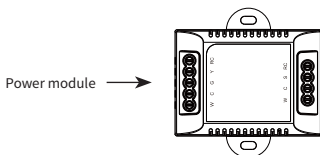
Power module

Power module requires your system to have the following wires:

4 wires: W/W1, Y/Y1, G, and R (or Rc or Rh)

or 3 wires: Y/Y1, G, and R (or Rc or Rh)

If you do not have these wires, your system may not be compatible with the power module.

Description:

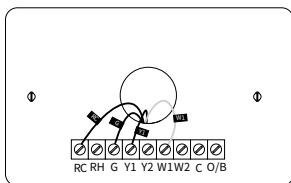The C-wire is used to provide power to the thermostat. If your system does not have "C" wire, you can use the power module to power your thermostat using the exiting wires.

To HVAC control board ⟵   ⟶ To thermostat

Power module
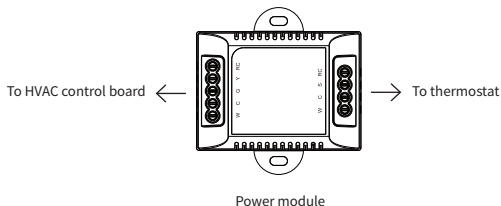
There are two sides with connections. One side (4 terminals) is for thermostat connections, the other side, pre-wired (5 terminals), is for the control board connections.

Step 1. Find the HVAC terminals

Find the control board of your HVAC system. Open your HVAC system's cover and take a picture of the wires connected to the terminals of your old thermostat. You may need to reference this photo later.
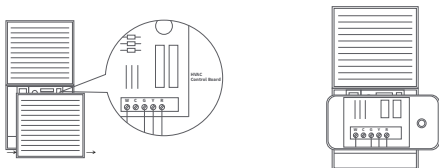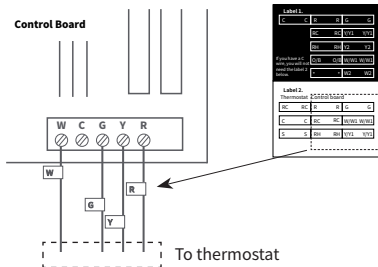

Step 2. Label the wires

Label only the wires from the control board to your old thermostat with the tags provided **(label 2 control board)**.

To thermostat

Step 3. Disconnect the wires

Disconnect the W/W1, G, Y/Y1, R wires from the control board.

Control Board

To thermostat
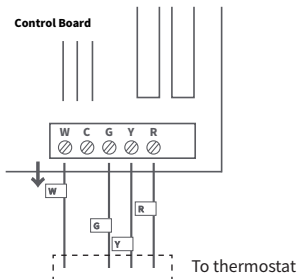
Step 4. Connect the wiring module

Reconnect them correspondingly to the 4 terminals side of the power module.

R→RC   W/W1→W   G→C   Y/Y1→S

To thermostat
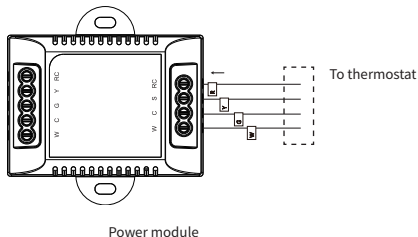
Power module

Step 5. Connect the wires

Generally, the control board will have W, C, G, Y, R terminal, connect the pre-wired side of the power module (5 terminals) to the corresponding terminals.
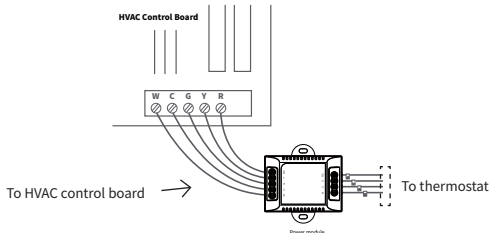
Step 6. Position the wiring module

The power module should be installed between your thermostat wiring and your control board. Install it at the right position then close the HVAC cover panel securely and return to your thermostat.
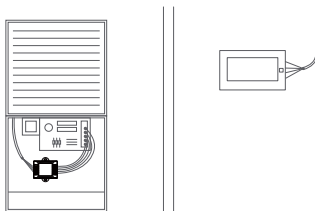
Step 7. Add new tags

Add new tags to the following tags to simplify your wiring:

R/RC/RH→ RC   **G→ C**   **Y/Y1→ S**
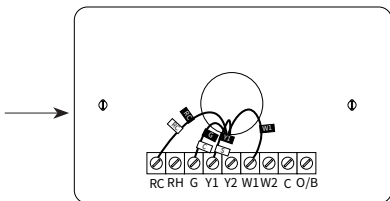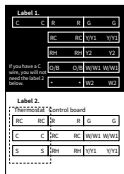
Step 8. Remove the wallplate

Unscrew the wallplate from the wall, gently pull it out and ensure the wires will not fall back into the hole.
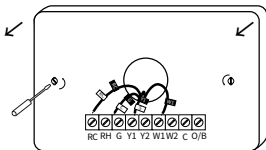
Step 9. Attach the base of PCT513 to the wall

Bundle and insert the wires through the hole of the base of PCT513, then attach the base to the wall with the screws.
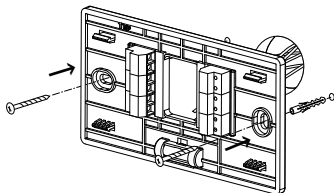
Step 10. Connect the wires

First, connect 3 wires as shown below：

RC, C, S
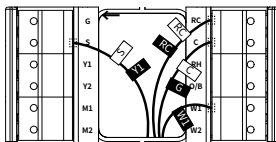
Then connect other wires to the corresponding terminal in the base. Take a picture of the wires when you finished. You may need to refer it for the wirings in the setup wizard later.

Step 11. DIP Switch

Adjust the DIP switch on the back of the thermostat to the **'Connect'** side.

DIP switch
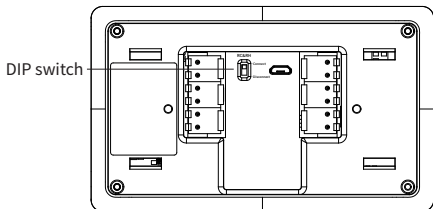
Step 12. Attach the PCT513 to the base

Gently press the PCT513 into the base until it clicks.
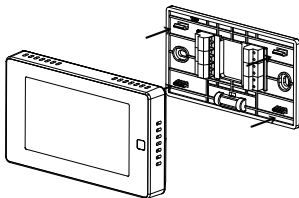
Step 13. Power on your system

Congratulation! The installation is finished. Please power on your HVAC system.

ON

or

Breaker box   Switch

When the power is successfully energized, the thermostat's screen will light up and go into wizard. You can complete the following configuration according to section 4.

Hi,
Welcome

Wiring diagrams

Below are the wiring diagrams for common HVAC equipment.

Conventional heating and cooling system

For dual heat and cooling system, if applicable.

Remove the jumper between Rh, Rc, or R terminals, adjust the DIP switch on the back of the thermostat to **'Disconnect'** if you have connected both RC-wire and RH-wire to the wallplate, otherwise switch it to the **'Connect'** side.
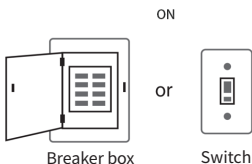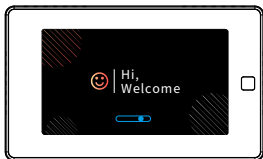
Heat pump (air or geothermal) with auxiliary heat
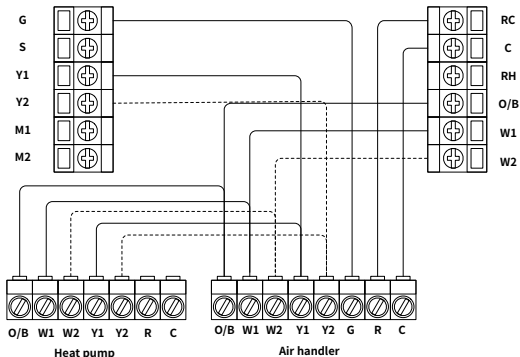
For dual heat and cooling system, if applicable.

Remove the jumper between Rh, Rc, or R terminals, adjust the DIP switch on the back of the thermostat to **'Disconnect'** if you have connected both RC-wire and RH-wire to the wallplate, otherwise switch it to the **'Connect'** side.

Boiler or radiant system with air handler and conventional cooling or heat pump

G	RC
S	C
Y1	RH
Y2	O/B
M1	W1
M2	W2

Air handler

Y1 Y2 R C G

Y1 Y2 C O/B[1]
Air conditioner or Heat pump

W1 R W2
Boiler

- - - - - - - - - - - - - -   For dual heat and cooling system, if applicable.

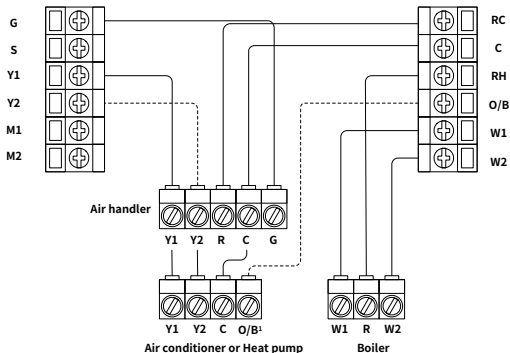1   For heat pump only.

Remove the jumper between Rh, Rc, or R terminals, adjust the DIP switch on the back of the thermostat to **'Disconnect'** if you have connected both RC-wire and RH-wire to the wallplate, otherwise switch it to the **'Connect'** side.

**Congratulations,
you have completed the wiring!**

**To complete your setup, follow the
instructions on the configuration guide
below.**

**In here you will find:
— App and device user guide
— Meet your thermostat
— FAQ**

4 Get started

4.1 To get started, you will need:
• Connect your smart mobile phone to your home Wi-Fi network.
• A mobile phone with a 'SmartONE' APP installed.

Follow the wizard first to complete the thermostat setup depends on your HVAC system.

4.2 Configuration:
1. Open your APP.
2. Login with existing account. If you are new user, create an account first.
3. One account must have at least one home location. You need to edit your home location first. If your account has set the home location already, please skip the 4~5 step.
4. Tap the **"Home Settings"**, and then tap the blue location icon to get the location automatically or tap the **"address"** to search the location manually.
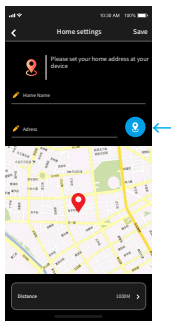
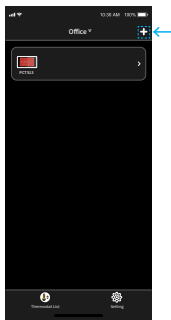5. Set the distance as the radius of the geofence
6. Edit your home name and then save.
7. Back to your thermostat. Click the Wi-Fi icon to configure Wi-Fi.
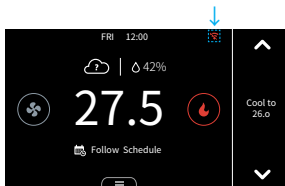
8. Tap **"Use APP"** and **"Start"** on the thermostat.
9. Click the **"+"** button at the top right corner on the APP to add devices.

10. Enter your home Wi-Fi account and password (Only support 2.4Ghz Wi-Fi), then tap **"Next"** button.

11. Place the router, mobile phone and thermostat as close as possible to waiting for connection.

12. After successful connection, you can rename the thermostat and click **"Finish"** to enter device list page. (If failed, please try the above steps again)

5 Meet Your Thermostat

5.1 Device Overview

Main page
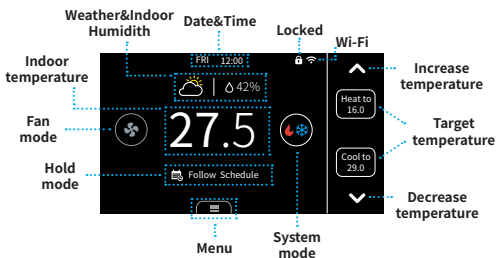
System mode
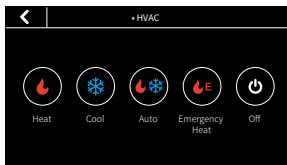
- **Heat:** Heating only

- **Cool:** Cooling only

- **Auto:** Automatic control of heating and cooling based on ambient

  temperature

- **Emergency Heat:** This only works when the device connects Heat pump and W wire

- **Off:** Turn the system off

Weather

The latest update time
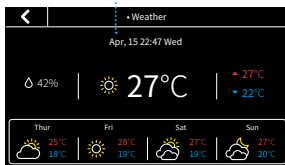
Click the weather icon to display the highest/lowest temperatures and weather conditions for the current days in your home location.

Fan mode
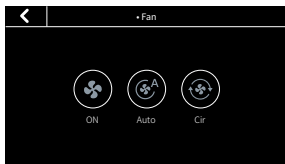
- 🌀 **On:** Runs continuously

- 🌀ᴬ **Auto:** Automatically adjust fan according to the system mode

• **Cir:** Runs at intervals to circulate air

Hold mode
There are four hold modes you can select
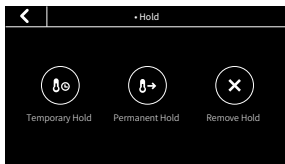
• **Follow Schedule:** Follow the settings of schedule to adjust the temperature. When you remove hold, the mode will turn to **'Follow Schedule'**

• **Permanent Hold:** Always hold the current target temperature even meet the schedule. It will override the current schedule settings.

• **Temporary Hold:** Keep the current target temperature until the next scheduled activity begins. You can select this mode manually or adjusting the target temperature under **'Follow Schedule'** mode, it will turn to **'Temporary Hold'**
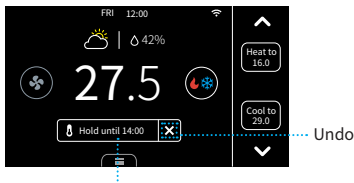
Hold temperature until next schedule

- 🏖️ **Follow Vacation:** If you are away for a long time, you can set the thermostat to vacation mode in **'Menu'->'Vacation'**. You can set the time of departure and return, as well as the highest and lowest temperatures during this period. The thermostat will automatically hold this temperature range.
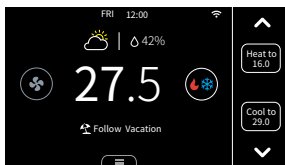
Note: During this mode, you cannot manually change the target temperature. If you want to exit this mode, change the Hold mode manually or delete the vacation in menu.

Display

Here are some changes on the screen and what that means:

①

Red: Heating
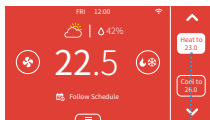
Blue: Cooling

Select the heating target temperature
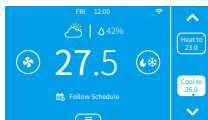
Select the cooling target temperature

②
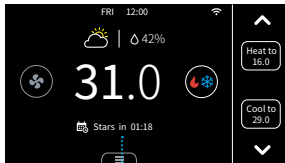
Time interval

When you turn on the compressor frequently, there will be a time countdown to protect the compressor. This will occur in the following case:

Heat pump: heating, cooling   Conventional: cooling

You can set the time countdown in **'Menu' ->'Installation' ->'Advanced' ->'Compressor Protect Time'**

③

When the outdoor temperature is below the 'Compressor Min Outdoor Temp' you set, the icon on system mode will display ! and the compressor will be turned off automatically.

When the outdoor temperature is higher than the 'AUX Heat Max Outdoor Temp' you set, the icon on system mode will display ⊘ and the AUX Heat will be turned off automatically.

The thermostat is connected to the router, but the router is not connected to the network

④

⚠ There may be a problem with the Cooling.

Done
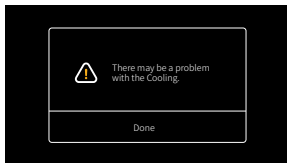
Unusual heating or cooling alert:
When the following occurs, this prompt appears on the thermostat
1. When your thermostat is cooling, the temperature in the room does not go down for a long time but instead temperature still raises.
2. When your thermostat is heating, the temperature in the room does not go up for a long time but instead the temperature still falls.

34

Menu
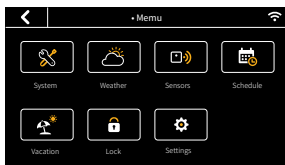
🛠️ System

- HVAC: Switch system mode (Heat/Cool/Auto/Emergency Heat/Off)

- Fan: Switch fan mode (ON/Auto/Cir)

☁️ Weather

Weather conditions for the current days in your home location.

📡 Sensors

Add multi sensors to balance the current temperature throughout the

home.

📅 Schedule

Set Schedule to change the temperature automatically.

⛱️ Vacation

Set vacation to change the temperature automatically.

🔓 Lock

Multi-level keypad lockout to avoid others tampering with the settings. After

locking, the corresponding function is not available and the corresponding

settings icon will go dim. An icon with a small lock will appear on top of main page

⚙️ **Settings**

- 🕐 Date &Time: Set time format

- 🐾 Fan Run Time: Set minimum fan run time in **'Cir'** mode during heating/cooling cycles

- 📶 Wi-Fi: Configure and display Wi-Fi information

- 🔥A Smart Warm-up: When smart warm-up is enabled, your thermostat automatically calculates when to turn on heating or cooling so your home will reach a scheduled temperature on time. This only works in **'Follow Schedule'** mode.

- ✏️ Device Name: Rename your device

- ℃℉ Temp Unit: Celsius or Fahrenheit

- 🌡️ Temp Range: Set the adjustment range of heating and cooling

- 🖥️ Screen: Adjust screen brightness on active/standby/sleep and standby time

- 💧 Calibrate: Adjust the accuracy of temperature and humidity to match your environment

- 🔧 Installation:

  Equipment: Reconfigure your wiring setting on thermostat

  Advanced:

1. Heat/Cool Dissipation Time

When the heating/cooling stops, the fan shuts off with a delay.

2. Compressor Protect Time

A time countdown to protect compressor to start frequently.

3. Compressor Min Outdoor Temp

When the outdoor temperature is below this temperature, the compressor will not be used.

4. Compressor/Aux Heat min on time during heating/cooling cycles

5. Compressor/Aux Heat Stage2 Temperature Delta

When the difference between the indoor temperature and the target temperature reaches this value, the second stage is automatically turned on.

6. Compressor/Aux Heat Stage 1 Max Runtime

If the first stage fails to reach the target temperature after this time, the second stage will be automatically turned on.

7. Aux Heat Max Outdoor Temp

Auxiliary heat is turned on only when the outdoor temperature is below this value.

Equipment Test: Test whether the corresponding function of the equipment can run normally as required

• ▥ Filter: Filter change reminder

- ↻ Reset:

    Reset setting

    Reset schedule (Reset system schedule and clear vacation)

    Reset all (reset the thermostat to default factory setting)

- ⓘ About: Show device information

5.2 App Overview:

Home .... Office ⌄ .... Add new device

.... Device

.... Connection Prompt

Thermostat List ....

.... Setting
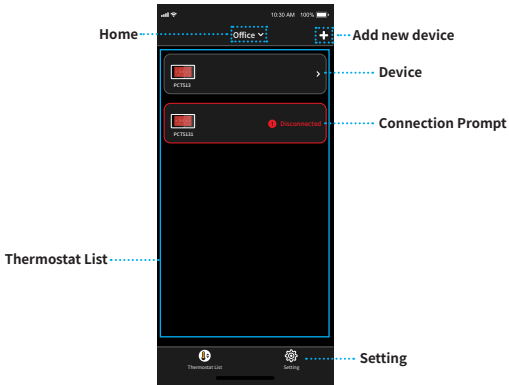
- **Home:** You can change the thermostat list in different home location.
- **Thermostat List:** You can check the added device and drop it down to refresh the list.
- **Device:** Tap one to enter control page or swipe left to remove the device.
- **Connection Prompt:** The prompt show up when the App can't connect to the thermostat. You can troubleshoot the problem according to the FAQ.
- **Setting:** You can edit the setting of App, such as family address, password, theme, geofence.

Control page
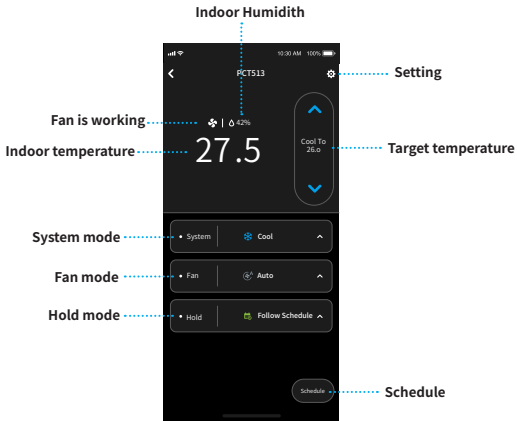
- **System mode:** Displays the current system mode. Tap it to switch the mode.
- **Fan mode:** Displays the current fan mode. Tap it to switch the mode.
- **Hold mode:** Displays the current hold mode. Tap it to switch the mode.
- **Schedule:** Set a schedule for the week so that you can get the right temperature at the certain time.
- **Target temperature:** Increase/decrease the target temperature.
- **Setting:** You can edit the setting of device, such as device name, vacation, fan run time, sensors, temperature unit.

6 FAQ

1.How to pair the thermostat with Remote Zone Sensors ?
1. Click the **'+'** button at the top right of the interface in **'Menu'** -> **'Sensors'** on the thermostat and tap **'Next'.**
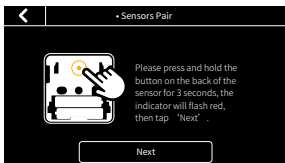
2. Remove the rear cover of the sensor.
3. Press and hold the button on the back of the sensor for 3 seconds until the indicator on the front of the sensor flash red.
4. Wait for sensors to pair automatically. When the pairing is successful, the sensor flashes green light for 3 times.

Now you can set the participation period of the sensor. During this period, the thermostat will calculate the average temperature of all the sensors in the occupied state as a reference. If there is no one in the room where the sensor is located, that sensor will not participate in that calculation.
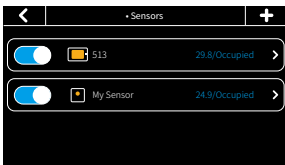
2.Will the thermostat switch schedules automatically based on my geographic location?

Yes, you can set the action by geofence.

1. Open your App. Go to **"Setting"** -> **"Geofence"** to enable geofence.

2. Set action when you enter or leave the geofence then save it.

3. You can also change the radius of the geofence in **"Setting"** -> **"Family Management"** -> **"Edit"** -> **"Distance"** on the App.

3.Enable voice control

3.1.Enable Alexa

1. Open your Alexa App.

2. Tap the icon ☰ on the top-left corner of the App to get into "Skills&Games" interface.
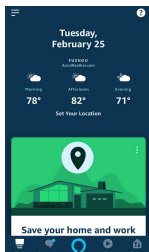
3. Search 'SmartONE' and enable the app to use the alexa.
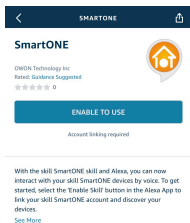
4. Log in to your SmartONE account and allow it to discover your devices. If your account is a mobile phone number, please add the area code in front of it. Such as "816 - 1234567".

5. Once the device is identified successfully, Alexa can be used to control the device by voice.

Voice Support:

1. Ask about the current temperature
   "Alexa, what's the temperature of [thermostat name]"
   "Alexa, what's the [thermostat name] temperature?"
   "Alexa, ask [thermostat name] the temperature"

2. Change the temperature.
   "Alexa, set [thermostat name] to [target temperature]"
   "Alexa, raise/lower the thermostat temperature by [number] degrees"
   "Alexa, raise/lower the [thermostat name] temperature by [number] degrees"
   "Alexa, increase/decrease the [thermostat name] temperature"
   "Alexa, increase/decrease [thermostat name] by [number] degrees"
   "Alexa, make it cooler in here"

"Alexa, make it warmer in here"

Note: If you change the temperature by voice on auto mode. It will maintain the temperature difference and keep the new temperature as the mid-point.

For example:

- Thermostat is currently set to 17 degrees for heating and 30 degrees for cooling (a 13 degrees difference between 17 and 30).
- You ask Alexa/Google to set the thermostat to 26 degrees.
- It will keep the temperature between 19.5 and 32.5 degrees, using the 26 degrees as the mid point and maintaining the 13 difference between the heating and cooling target temperature.

3. Change System Mode

"Alexa, set [thermostat name] to Heat/Cool/Auto/OFF mode"

"Alexa, switch [thermostat name] to Heat/Cool/Auto/OFF mode"

"Alexa, switch to Heat/Cool/Auto/OFF mode in the [thermostat name]"

3.2.Enable Google Assistant

1. Open your Google Assistant App.
2. Tap the icon 👤 on the top-right corner of the App to get into "Account Setting" interface.
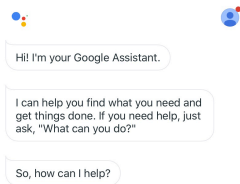
3. Select "Assisant" -> "Home control".
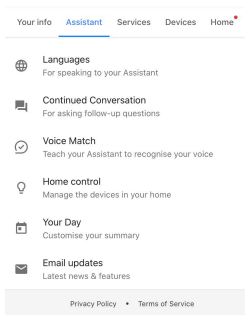
4. Tap the "+" on the bottom-right corner of the App to add your device.
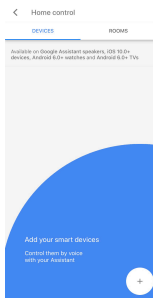
5. Search 'SmartONE' and login your SmartONE account to link your thermostat.

Voice Support:

1. Ask about the current temperature
 "OK Google, what's the temperature of [thermostat name]"
 "OK Google, what's the [thermostat name] temperature?"
 "OK Google, ask [thermostat name] the temperature"

2. Change the temperature.
 "OK Google, set [thermostat name] to [target temperature]"
 "OK Google, raise/lower the thermostat temperature by [number] degrees"
 "OK Google, raise/lower the [thermostat name] temperature by [number] degrees"
 "OK Google, increase/decrease the [thermostat name] temperature"
 "OK Google, increase/decrease [thermostat name] by [number] degrees"
 "OK Google, make it cooler in here"

"OK Google, make it warmer in here"

Note: If you change the temperature by voice on heat.cool mode. It will maintain the temperature difference and keep the new temperature as the mid-point.

For example:

- Thermostat is currently set to 17 degrees for heating and 30 degrees for cooling (a 13 degrees difference between 17 and 30).

- You ask Google Assistant to set the thermostat to 26 degrees.

- It will keep the temperature between 19.5 and 32.5 degrees, using the 26 degrees as the mid point and maintaining the 13 difference between the heating and cooling target temperature.

3. Change System Mode

"OK Google, set [thermostat name] to Heat/Cool/Heat.Cool/OFF mode"

"OK Google, switch [thermostat name] to Heat/Cool/Heat.Cool/OFF mode"

"OK Google, switch to Heat/Cool/Heat.Cool/OFF mode in the [thermostat name]"

4. Wi-Fi configuration of the thermostat failed
- Confirm the device, mobile phone, and router are as close as possible.
- Please confirm the network is stable:
  Put the phone besides your device and make sure they are in the same network environment, try to open a website to judge if the network can be used.
- Confirm adding device is under 2.4G WI-FI channel. If 2.4G and 5G WIFI use the same name, it is recommended to change to a different name.
- Confirm the entered router password is correct.
- If it still does not work, it is recommended to change the router and try again.

5. Device offline
- Confirm whether the thermostat is powered on.
- Confirm whether the device or the network has been cut off. If so, please reconnect the network, it may need some time to recover. Please check the status 2 minutes later.
- Please confirm the network is stable:
  Put the phone besides your device and make sure they are in the same network environment, try to open a website to judge if the network can be used.
- Please confirm whether the home Wi-Fi network is normal, or whether the Wi-Fi name and password has been modified. If necessary, remove the device and add again.
- If the network is normal, but the device is still offline, please check if there are too many Wi-Fi connections. Please try to restart the router, wait for 5 minutes and observe the status of the device.
- If there still have problems after the above checking, it is recommended to remove the device or change the router to add it again.

Technical specifications

Thermostat:

Compatibility	
Compatible systems	• Conventional: 2-stage heating and 2-stage cooling HVAC systems • Heat Pump: 2-stage heating, 2-stage cooling, 2-aux heating • Supports natural gas, electric, hot water, steam or gravity, gas fireplaces (24 Volts), oil heat sources • Supports heat pump, dual fuel

HVAC Control Functions	
System Mode	• Heat, Cool, Auto, Off, Emergency Heat (Heat Pump only)
Fan Mode	• On, Auto, Circle(adjustable)
Advanced	• Setting temperature locally or remotely • Auto-changeover between heat and cool mode (System Auto) • Compressor protection time is available for select • Failure protection by cutting off all circuit relays • Smart warmup • Low temperature protection

Wireless Connectivity	

Wi-Fi	• 802.11 b/g/n @ 2.4GHz
Radio	• 915MHZ

Physical Specifications

LCD Screen	• 4.3-inch color touch screen
PIR Sensor	• Sensing Distance 3m, Angle 70°
Electrical Rating	• 24 VAC, 1A Carry; 5A Surge 50/60 Hz
Max. Load Current	• 1A
Operating Environment	• 0~ 50° C, 32 ~122° F • Humidity range: 5%~95%
Storage Temperature	• -30 ~ 60° C , -22° F ~ 140° F
Wiring	• 18 AWG, Requires both R and C wires from the HVAC System
Dimensions	• 131(L) × 78 (W)× 29.2(H) mm
Mounting Type	• Wall Mounting

Remote Zone Sensor:

Battery	• DC 3V (2*AAA batteries)
Radio	• 915MHZ
LED	• 2-color LED (Red, Green)
PIR	• Detect occupancy • Sensing Distance 5m, Angle 120°
Operating Environment	• 0~ 50° C, 32 ~122° F (Indoor only) • Humidity range: 5%~95%
Dimension	• 62(L) × 62 (W)× 15.5(H) mm
Mounting Type	• Tabletop stand or Wall mounting